

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

ENERGY FACILITY SITING BOARD/PUBLIC UTILITIES COMMISSION

In Re: Invenergy Thermal Development LLC        )  
Application to Construct and                    )  
Operate the Clear River Energy                )     EFSB Docket SB-2015-06  
Center, Burrillville, Rhode Island            )     PUC Docket 4609

PREFILED TESTIMONY OF  
GLENN C. WALKER

Summary:

The prefiled testimony of Mr. Walker concludes that the proposed Clear River Energy Center (“CREC”) is not justified by long term state and/or regional energy need forecasts, and that there are cost effective efficiency and conservation opportunities that provide appropriate alternatives to the proposed facility.

## **List of Exhibits**

Exhibit GCW-1	Resume of Glenn C. Walker
Exhibit GCW-2	Comparison of Spark Spreads for New England

1 INTRODUCTION

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**Q. Please state your name, business address, and employer.**

A. My name is Glenn C. Walker and my business address is 7 Greenleaf Woods Drive, Unit 102, Portsmouth, NH. I am employed by George E. Sansoucy, P.E., LLC.

**Q. On whose behalf are you testifying?**

A. My testimony is on behalf of the Town of Burrillville, RI in opposition to the application for a license from the Rhode Island (“RI”) Energy Facility Siting Board (“EFSB” or the “Board”) to construct the Clear River Energy Center (“CREC”) project in Burrillville, RI.

**Q. Please summarize your professional background and experience.**

A. I have been employed by GES for over 20 years. My responsibilities include the valuation of electric generating facilities and utility infrastructure for *ad valorem* tax purposes, ratemaking, and/or financial purposes. I also provide consulting services in the area of energy market analyses, strategic planning, and regulatory matters to various clients throughout North America.

My educational background includes a BS in Business Administration from the University of New Hampshire. I am an Accredited Senior Appraiser (ASA) through the American Society of Appraisers and hold a Certified General Appraiser license in ten (10) states including RI. My resume is provided as Exhibit GCW-1.

1 **Q. What is George E. Sansoucy, P.E., LLC (“GES”)?**

2 A. GES is an engineering and appraisal company providing valuation services, economic  
3 analyses, and regulatory consultation to governmental and private clients throughout New  
4 England and the country. The firm’s clients include public entities such as state and local  
5 government agencies, as well as utilities and financial institutions. The firm’s staff  
6 includes professional engineers and appraisers with experience in a wide range of energy,  
7 utility, and regulatory matters. The staff has provided testimony in legal and regulatory  
8 proceedings before state and federal courts and administrative agencies, including the  
9 Federal Energy Regulatory Commission (“FERC”) and the Nuclear Regulatory  
10 Commission (“NRC”).

11  
12 **Q. Have you previously testified before the Rhode Island PUC?**

13 A. No, however I have testified before numerous courts and regulatory bodies including the  
14 New Hampshire PUC.

15  
16 **Q. What is the purpose of your testimony in this proceeding?**

17 A. On October 29, 2015, Invenenergy filed an application with the RI EFSB to construct the  
18 CREC, a proposed 1,000± megawatt (“MW”) two block combined cycle dual-fueled  
19 generating facility to be located in Burrillville, RI. The capacity of each power block for  
20 Units 1 and 2 is rated at approximately 500 MW.

21  
22 My testimony addresses why I am of the opinion that the proposed facility is not justified  
23 by long term state and/or regional energy need forecasts, and that there are cost effective

1 efficiency and conservation opportunities that provide appropriate alternatives to the  
2 proposed facility. In light of recent developments, the September 12, 2016 Advisory  
3 Opinion from the RI PUC on these issues has been proven to be inaccurate. My testimony  
4 addresses the following:

- 5 • The rejection by the ISO-NE of the second unit at CREC in the last two Forward  
6 Capacity Auctions (“FCAs”);
- 7 • The level of energy-efficiency, demand reduction, and renewables procured by the  
8 ISO-NE in its most recent FCA;
- 9 • The anticipated trend of energy-efficiency, demand reduction, and renewable resource  
10 in the ISO-NE’s geographic region;
- 11 • The fact that the CREC is not needed in Rhode Island or the local region; and
- 12 • The expectation that the ISO-NE capacity prices will remain at or near \$5.00 to  
13 \$6.00/kW-month in the near-term, illustrating the existence of lower cost alternatives  
14 than CREC.

15  
16 **Q. Are you familiar with the ISO-NE market?**

17 A. Yes, as part of my valuation and consulting work relating to electric generating facilities,  
18 I monitor market rules as well as the supply and demand characteristics of the markets. In  
19 addition, I routinely analyze the past, present, and future price trends in the energy,  
20 capacity, and ancillary services markets.

1 **Q. What is the ISO-NE?**

2 A. The ISO-NE is a non-profit Regional Transmission Organization (“RTO”) that serves the  
3 geographic area of most New England states, the exception being northern Maine. The  
4 ISO-NE is responsible for regional system planning, operating the electric transmission  
5 system, and administering the wholesale energy, capacity, and ancillary services markets  
6 in its geographic region. The ISO-NE is the entity that assures there are sufficient resources  
7 to meet electrical demand in the region, primarily by the Forward Capacity Market  
8 (“FCM”).

9

10 **Q. Can you provide a summary of the ISO-NE FCM?**

11 A. The FCM is designed to ensure that the ISO-NE geographic region will have sufficient  
12 resources to meet the current and future demand for electricity. The ISO-NE models the  
13 need for future electric resources based on the probabilistic demand for electricity less  
14 behind-the-meter renewables (such as solar), energy-efficiency, and demand reduction.  
15 The ISO-NE then procures resources from existing and proposed resources to assure that  
16 there is sufficient supply, including an adequate reserve. The ISO-NE procures supply  
17 through the use of FCAs which are held annually, three years in advance of the operating  
18 period. Resources bid into these auctions to obtain a Capacity Supply Obligation (“CSO”)  
19 in exchange for a capacity payment. There are additional reliability and performance  
20 requirements, but this is the general function of the FCM.

1 **Q. Please provide an overview of the ISO-NE FCM and the proposed CREC.**

2 A. The CREC being proposed for construction in the Town of Burrillville is a natural gas-  
3 fired combined-cycle facility comprised of two units with nominal ratings of 500 MW  
4 each. One of the two units received a CSO in FCA 10 for the 2019-2020 time period. The  
5 second unit was not selected to receive a CSO as it was not needed by the ISO-NE for the  
6 2019-2020 time period.

7  
8 Invenergy hoped that by rebidding into FCA 11, the second unit of CREC would be  
9 included for a CSO for the 2020-2021 time period. However, in the most recent auction  
10 (FCA 11) concluded in February 2017, the ISO-NE failed to select the second unit for a  
11 CSO, confident that the second unit was not needed for electric system reliability in the  
12 2020-2021 time period.

13  
14 **Q. Can you summarize the outcome of FCA 11?**

15 A. In the ISO-NE annual capacity auction conducted in February 2017 (FCA 11), the ISO-NE  
16 obtained sufficient resources to fully meet anticipated demand for the year 2020-2021  
17 without awarding a CSO to any new fossil-fired facility in New England. The auction  
18 closed at \$5.30/kW-month, significantly lower than the \$7.03/kW-month in FCA 10. New  
19 energy-efficiency and demand reduction totaling 640 MW cleared the latest auction along  
20 with demand reduction from behind-the-meter solar photovoltaic (“PV”) of 720 MW. The  
21 New England system cleared with a surplus of 1,760 MW and the Southeast New England  
22 (“SENE”) zone, which includes RI, cleared with a surplus of 1,926 MW. These figures

1 illustrate the robust market in New England for energy-efficiency and demand reduction  
2 along with renewables and without any of the CREC project's capacity.

3  
4 **Q. Without Unit 2, did the ISO-NE procure surplus resources in FCA 11?**

5 A. Yes, as stated above, the ISO-NE procured 1,760 MW of surplus capacity in FCA 11.

6  
7 **Q. How does the procurement of energy-efficiency, demand reduction, and renewables  
8 compare in FCA 11 to FCA 10?**

9 A. In FCA 11 the ISO-NE procured 269 MW more energy-efficiency and demand reduction  
10 measures than in FCA 10, or an increase of approximately 72%. It also procured 330 MW  
11 more of behind-the-meter solar resources, an approximately 84% increase. These single  
12 year increases illustrate the significant penetration of these non-fossil resources into the  
13 market.

14  
15 **Q. In FCA 11 were there any significant unit retirements?**

16 A. No large resources retired in FCA 11. A few small oil-fired generating units delisted during  
17 the auction, which means they chose to drop out of the FCM for one year but can still sell  
18 energy during the 2020-2021 capacity period. In fact, these units may choose to re-enter  
19 FCA 12.

20  
21 **Q. Are you familiar with the ISO-NE Regional Electricity Outlook which is published  
22 annually?**

1 A. Yes, the ISO-NE Regional Electricity Outlook summarizes factors impacting system  
2 reliability and costs to electric customers.

3

4 Q. **Are you aware that in this document the ISO-NE identifies units that have retired as  
5 well as those units which may possibly retire in the near future?**

6 A. Yes, in 2015 the ISO-NE started publishing statistics in its Regional Electricity Outlook  
7 on units that plan to retire or are at risk of retiring.

8

9 Q. **Have a number of units identified in the 2015 Regional Electricity Outlook retired  
10 prior to FCA 11?**

11 A. Yes, most of the units at risk for retirement appear to have retired prior to FCA 11.

12

13 Q. **In your opinion do the results of FCA 11 provide insight into future retirements?**

14 A. Yes, the results of FCA 11 indicate that prices are sufficient to keep units from retiring in  
15 the near term.

16 In our experience with units such as the Wyman, Canal, and Newington stations, the  
17 owners anticipate them operating into the foreseeable future. In at least one instance, the  
18 owner has invested in upgrades to allow the unit to meet the pay for performance rules  
19 instituted by the ISO-NE. In addition, Eversource recently initiated a sales process for all  
20 of its generating units including the Newington and Merrimack stations, both of which it  
21 presumably is marketing as going-concerns with the expectation that these units will  
22 continue to operate in the ISO-NE market.

23

1 **Q. Do you anticipate significant retirements in FCAs 12 through 14?**

2 A. No, the capacity price of \$5.30/kW-month in FCA 11 appears to be sufficient for owners  
3 of older units to continue bidding into future auctions and defer retirement.

4

5 **Q. What general price levels do you expect in the next several FCAs?**

6 A. Based on the use of the ISO-NE's sloped demand curve, the lack of anticipated retirements,  
7 and the continued deployment of non-fossil resources, it is likely that the next several  
8 auctions will be in the range of \$5.00 to \$6.00/kW-month.

9

10 **Q. Given the surplus of capacity that was procured in FCA 11, do you anticipate that**  
11 **Unit 2 will receive a CSO in the next several auctions?**

12 A. No, given the current level of surplus capacity, lack of retirements in FCA 11, and  
13 anticipated development of energy-efficiency, demand reduction, and renewable resources,  
14 it is unlikely that Unit 2 will get a CSO in the next several auctions. In addition to these  
15 factors, anticipated margins or the "spark spreads," which reflect the difference between  
16 the price of energy vs. the cost of fuel burned, have declined in New England and are  
17 anticipated to remain at levels of approximately \$5.00/MWh lower than forecast in the Fall  
18 of 2014 (this is illustrated in Exhibit GCW-2). Therefore, the lower spark spread will make  
19 it even more difficult for the second CREC unit to offer its capacity at prices in the \$5.00  
20 to \$6.00/kW-month range due to reduced anticipated profits from the sale of energy.

21

22 **Q. In your opinion, are there substantial amounts of renewable resources available in**  
23 **New England and can you provide a basis for your conclusion?**

1 A. Yes, in 2016, the states of Connecticut, Massachusetts, and Rhode Island issued a request  
2 for clean energy. The request termed the “three-state Clean Energy RFP” procured a total  
3 of 460 MW of clean energy from large-scale wind and solar resources.

4  
5 In addition, a total of 4,590 MW of transmission projects bid to connect customers in New  
6 England with new or existing renewables in the Northeast and/or Canada. These projects  
7 were not awarded contracts in the three-state Clean Energy RFP, but are anticipated to  
8 participate in the upcoming Massachusetts clean energy bill solicitation. Therefore, it is  
9 likely these resources will begin participating in upcoming FCAs.

10

11 **Q. Are you aware of legislative action that will provide future renewable growth?**

12 A. Yes, in 2016, Massachusetts passed a comprehensive clean energy bill, which “requires  
13 utilities to competitively solicit and contract for approximately 1,200 MW of clean energy  
14 generation – base load hydropower, onshore wind and solar supported by hydropower,  
15 standalone onshore wind, solar and other Class I renewable resources.”<sup>1</sup> The legislation  
16 also permits the procurement of 1,600 MW of offshore wind. This total procurement would  
17 reflect approximately 40% of all electricity consumed in Massachusetts.

18

19 **Q. Is the CREC necessary to meet the needs of Rhode Island and/or the region for energy**  
20 **of this type?**

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<sup>1</sup> <http://www.mass.gov/governor/press-office/press-releases/fy2017/governor-baker-signs-comprehensive-energy-diversity-law.html>

1 A. No. In FCA 10, the ISO-NE procured a surplus of 1,416 MW of capacity in the SENE  
2 zone. In FCA 11 the ISO-NE procured a surplus of 1,926 MW of capacity in the SENE  
3 zone. This proves the lack of need for both Units 1 and Unit 2 in the SENE zone.  
4

5 **Q. In the ISO-NE 2017 Regional Electricity Outlook, does it identify natural gas**  
6 **constraints and lack of fuel diversity in New England as a threat to reliability?**

7 A. Yes, starting at page 25 the ISO-NE states: “Because generators have no guarantee of when  
8 or how long they’ll be called to run—and there’s no practical way to store excess natural  
9 gas or electricity—this “just-in-time” strategy helps natural-gas-fired generators keep their  
10 costs as low as possible to maintain competitiveness in the wholesale electricity markets.  
11 While that works for most of the year, on cold days, the pipelines are running at or near  
12 maximum capacity solely to meet heating demand. During several past winters, this  
13 situation has severely limited the delivery of fuel for much of the region’s generating  
14 capacity, which, in turn, threatened the reliable supply of electricity and drove up wholesale  
15 electricity prices and air emissions.”  
16

17 **Q. Has there been a change in the ability of CREC to operate on oil during periods of**  
18 **gas supply constraints to the New England region?**

19 A. Yes, the lack of a local pipeline-based water supply source has resulted in CREC proposing  
20 a revised water plan to utilize on-site storage tanks as a water supply. The proposal is to  
21 supply water to the tanks via trucks from a filling station in Johnston. The tanks  
22 significantly limit the facility’s ability to operate on oil to only three (3) days because the

1 high volume of trucks necessary to refill these tanks will limit the hours the facility can  
2 operate on oil during a natural gas supply interruption.

3  
4 **Q. In your opinion, does the revised water plan make the CREC a less desirable  
5 generating resource in the mind of ISO-NE?**

6 A. Yes, not only does this adversely impact local communities with tanker truck traffic, but  
7 the limitation on the facility to three (3) days of oil firing will limit the its effectiveness  
8 when these are constraints on the gas line, making the unit less desirable in the marketplace.

9  
10 **Q. In regards to CREC's fast start, ramping, and flexibility characteristics, are there  
11 other alternatives being proposed in the market?**

12 A. Yes, these sources are anticipated to be supplied with energy storage technologies in the  
13 future, including batteries, pumped storage, and other forms of energy storage or load  
14 shifting. For example, in May 2015, the Baker Administration in Massachusetts launched  
15 an energy storage initiative to promote this type of storage technology. The new advanced  
16 energy storage program is designed to enhance the efficiency, affordability, resilience, and  
17 cleanliness of the electric grid. In this regard, the program envisions 600 MW of new  
18 advanced energy storage to be developed in Massachusetts by 2025 with an \$800 million  
19 benefit to ratepayers.<sup>2</sup> This is just a single example of how storage will reduce the need  
20 for new fossil units in the ISO-NE geographic region.

21  
22 **Q. Does it matter that several of your examples relate to Massachusetts?**

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<sup>2</sup> State of Charge, Massachusetts Energy Storage Initiative Study, p. i.

1 A. No, Rhode Island and Massachusetts have been combined together for electrical purposes  
2 in the SENE load zone. Therefore, efficiency or renewable programs implemented in  
3 Massachusetts benefit the entire SENE zone.

4

5 **Q. Does that conclude your testimony?**

6 A. Yes.